

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

AMPEX CORPORATION,)	
)	
)	
Plaintiff,)	C.A. No. 04-1373-KAJ
)	
v.)	
)	
EASTMAN KODAK COMPANY, ALTEK)	
CORPORATION and CHINON INDUSTRIES,)	
INC.,)	
)	REDACTED
Defendants.)	
)	
)	
)	
)	

**DECLARATION OF DR. BRAD A. MYERS IN SUPPORT OF
DEFENDANTS' ANSWERING BRIEFS TO AMPEX CORPORATION'S
MOTIONS FOR SUMMARY JUDGMENT**

1. I make this declaration in support of Defendants' Answering Briefs in Opposition to: (i) Ampex Corporation's Motion for Partial Summary Judgment that U.S. Patent No. 4,821,121 Is Not Anticipated; and (ii) Ampex Corporation's Motion for Summary Judgment that U.S. Patent No. 4,802,019 Is Not Prior Art to U.S. Patent No. 4,821,121.

2. I have been retained as an expert in this case by counsel for Defendants, Eastman Kodak Company ("Eastman Kodak") and Altek Corporation ("Altek").

3. I am currently a Professor in the Human-Computer Interaction Institute, which is part of the School of Computer Science at Carnegie Mellon University. My areas of expertise include computer science, object-oriented languages, programming

languages, user interface software, visual programming, user interface design and demonstrational interfaces.

4. I have been working in the field of user interfaces (also called Human Computer Interaction or "HCI") for over 25 years, and I am the author or editor of over 300 publications. I am on the editorial board of five journals, including the premier journals in the field of HCI. I have been a consultant on user interface design and implementation to over 50 companies.

5. I received a Bachelor of Science in Computer Science and Engineering and Master of Science in Computer Science from the Massachusetts Institute of Technology ("MIT") in 1980. I received my Doctorate in Computer Science from the University of Toronto in 1987.

6. From 1976-1979, while I was a student at MIT, I worked at the Architecture Machine Group on a variety of projects, including a graphical editor for a version of the Spatial Data Management System ("SDMS").

7. From 1977-1979, I was a research intern at the Xerox Palo Alto Research Center ("Xerox PARC"). During that time, I personally used various picture editing and drawing programs, including Markup for the Alto computer, which was one of the first computer systems that could edit photographs interactively.

8. I worked at the Three Rivers Computer Corporation (later renamed Perq Systems Corporation) from 1980-1983 where I designed and implemented software, including one of the first commercial window managers.

9. Over the course of my career, I have authored multiple articles relating to, among other subjects, window management, handheld computing, user interface software, visualization, intelligent interfaces, and novel interaction techniques. In recognition of my contributions to research, I was selected as a fellow of the Association for Computing Machinery (“ACM”) in 2005, and elected to the “CHI Academy” by the Special Interest Group on Computer-Human Interaction (“SIGCHI”) of the ACM in April 2004, as one of the top 25 “principal leaders of the field” of HCI. I have also received a number of “best paper” awards, for example at the 27th International Conference on Software Engineering in 2005, at the ACM SIGACCESS Conference on Computers and Accessibility in 2004, and at the ACM SIGCHI 2006 Conference on Human Factors in Computing Systems.

10. I am listed as an inventor on U.S. Patent No. 5,581,677, relating to interaction techniques for creating charts and graphs. I am also listed as an inventor on two pending patent applications, one relating to a more stable technique of entering text for handheld devices for people with muscular disabilities, and the other relating to a technique for debugging computer programs that displays a visualization to show why certain events happen in a program.

11. In this litigation, I expect to testify regarding my opinion that the asserted claims of U.S. Patent No. 4,821,121 (the “121 patent”) are invalid as anticipated by the information disclosed in the original application for U.S. Patent No. 4,802,019 to Harada et al. (the “Harada patent”).

12. I expect to further testify that the Computer Corporation of America's Spatial Data Management System (the "CCA SDMS") disclosed all of the elements of claims 13 and 15 of the '121 patent. The CCA SDMS was developed and implemented in the United States no later than July 1980. CCA SDMS was also publicly displayed, used and described in the United States prior to April 8, 1982. To the extent a claim construction is adopted that construes the phrase "either ... or" contained in the asserted claims to allow the recall of a full size image or a reduced size image, or both, I expect to testify regarding my opinion that all of the asserted claims of the '121 patent are invalid as anticipated by the CCA SDMS.

13. To the extent that a claim construction similar to those I have identified is asserted or adopted under which any of the above identified systems do not meet each element of the asserted claims, I expect to testify regarding my opinion that the asserted claims would have been obvious in view of the relevant prior art systems and materials.

14. My Initial Expert Report in this action, dated March 24, 2006, summarizes my opinions.

I. The Harada Application

15. The original application for the Harada patent (the "Original Application"), which was assigned Serial No. 06/455,115 by the U.S. Patent and Trademark Office, was filed on January 3, 1983. The Original Application describes a still store system that could capture, store, manipulate, reorganize, and recall still images captured from a video stream. A continuation-in-part application was filed on May 12, 1986, in which additional details about the functionality of the memory replacement

control circuit, a component responsible for reordering images in a mosaic, were added. That continuation-in-part application eventually issued as the Harada patent.

16. There are some portions of the disclosure that eventually matured into the '019 patent that were not included in the Original Application filed on January 3, 1983. For instance, the sentence about Figure 6 in the brief description of the drawings section was not in the original disclosure. Moreover, the text from Column 5, line 45 through Column 8, line 3 was not in the Original Application. There were also some minor changes to wording throughout the rest of the document.

17. Despite these changes, the issued claims of the '019 patent are supported by the Original Application. The fundamental components of the system and its functionality were included in the Original Application for the '019 patent. I understand that Ampex asserts that none of the issued claims of the '019 patent are enabled by the Original Application which I understand that Ampex claims is a requirement for the Harada application to be considered prior art. However, I disagree with the assertion that none of the issued claims of the '019 patent are enabled by the Original Application.

18. The file history for the '019 patent reveals that claim 9 of the '019 patent was originally claim 11 in the Original Application as shown in an amendment filed on July 23, 1985, which predates the filing of the continuation-in-part application in 1986. As explained below, most of the elements of what became claim 9 existed before the filing of the continuation-in-part application in 1986. To start, the patent examiner did not reject claim 11 for lack of a written description. In other words, he considered the part of claim 11 that existed at that time to be described in or supported by the specification.

Instead, other than objecting that the phrase “directly pointing” was vague and asking, “what is directly pointed,” the examiner only rejected this claim as being obvious in view of some prior art.

19. Only two new portions were added to Original Application claim 11 (claim 9 of the ‘019 Harada patent) and both new parts are enabled and otherwise supported in the Original Application.

20. For instance, the first part that was added to claim 11 states the following: “a detecting circuit for detecting the position of said segmented areas designated by said selecting means on the basis of horizontal and vertical sync signals for said screen, said detecting circuit including means for detecting intermediate regions respectively provided between adjacent segmented areas on said screen.” This part is shown in Figure 1 as the “Index Number Detecting Circuit” [9] and the index screen of Figure 3. The specification of the Original Application explains that the “detecting circuit 9” detects intermediate regions represented by “gate signals produced on the basis of horizontal and vertical sync signals.” No additional information about this operation was added as part of the continuation-in-part application, so the examiner agreed that this part was enabled by the Original Application.

21. The second part that was added to claim 11 of the Original Application consists of the following language: “a detecting output thereof being utilized to rearrange the arrangement of said reduced still pictures on said screen.” This part is described in detail in the Original Application where it discusses the replacement and insertion of reduced size pictures on the screen. For example, the Original Application explains how

if “it is assumed that the picture 5 is to be inserted between the pictures 1 and 2”, the reduced still pictures are rearranged so that, instead of appearing in numerical sequence, picture 5 appears between pictures 1 and 2.

22. Thus, the Original Application explains that the function of the memory replacement control is to insert a new picture between two pictures, or in another example, to swap the two selected pictures in memory. One of ordinary skill in the art in the early 1980s would understand how to “rearrange the arrangement of said reduced still pictures on said screen” because the kinds of rearrangements discussed are just swapping two pictures, inserting a picture, or replacing a picture. The pictures are stored in a computer memory. Any student after completing their first or second programming class would know how to write a program for a microprocessor that would swap the contents of two memory locations, and how to do the insertion or replacement, so certainly someone who has a Bachelor’s degree and a few years experience would find this trivial to implement.

23. The phrase “directly pointing” appears in the middle of the second paragraph of the claim, in the phrase “selecting means for designating one of said multiple segmented areas to select the reduced still picture displayed therein by directly pointing to the surface of said screen.” That phrase remained in the claim and the Examiner dropped the objection to the phrase. The phrase is supported by the Original Application, which describes that the “information corresponding to the desired index number is detected through a detecting circuit 9 by directing the light pen 10 onto one of squeezed still pictures to be selected.” That is, a light pen is directly pointed to the

surface of the screen. The light pen directly pointing to the screen is also shown by Figures 2 and 3 of the Original Application.

24. There were no objections to the rest of claim 11. There is support for the rest of the claim in the first few pages of the "Description of the Preferred Embodiment." The claimed random access recording and playback member corresponds to the disk type recording/reproducing apparatus 3. Recording to the disk, as well as the correspondence of the reduced pictures to the still pictures, is described in the Original Application.

25. The screen for displaying the reduced pictures or a still (full size) picture is described in the Original Application. I already have described the "selecting means," which is described in the Original Application. Controlling the random access recording and playback member and the means for electronically recording the signal are also described in the Original Application.

26. As a result of all of the above, it is my opinion that everything in Claim 9 of the '019 patent is supported and enabled by the Original Application.

27. The Original Application contains Figures 1-5 of what issued as the Harada patent. The Original Application explains that the purpose of the invention is "to accomplish quick selection of the desired pictures from a plurality of squeezed still pictures on the index screen." The problem with the prior art approach for digital still store systems is described as taking too much time to "find ... the desired pictures." The Original Application describes a picture processing system for the selective display of images ("a picture processing system for displaying a plurality of still pictures recorded in a recording member"). In the field of invention section, it describes the system as an

“apparatus for selecting a desired picture from a plurality of still pictures formed on a monitor screen.”

28. The Original Application indicates that the system would be used in TV broadcasting.

29. The preferred embodiment described in the Original Application takes an analog video signal and captures digital pictures representing frames of video from it. The system can store, recall and manipulate the pictures. For each of these full-size images, the system automatically creates a smaller or reduced version of the picture, which is referred to as the “squeezed” image in the Original Application and patent. Both the large and squeezed pictures are stored in memory and on the disk. A user can view a collection of squeezed images in a mosaic and can then select a small “squeezed” image in order to view the corresponding full-size image. The Original Application explains that the screen of the TV monitor “is divided into a plurality of segments (in this example, 16 segments) and each of the squeezed still pictures is displayed on each of the segments.” This is illustrated in Figure 2 of the Original Application. In the field of the invention section, it describes the system as an apparatus for “selecting a desired picture from a plurality of still pictures formed on a monitor screen.”

30. The key components of the system described in the Original Application are, among other things, a monitor, random access memory, a squeezer, and a disk for storage of the images. There are two picture memories, an index memory, and the memory replacement control.

31. In the Original Application, images are captured from an external input video signal such as a video camera. A video image is input at the location labeled "a" in Figure 1 of the Original Application, converted into digital signals by the analog-to-digital converter, and a frame is written into the picture memory, which is labeled 2 on Figure 1 of the Original Application.

32. In the Original Application, the image data initially goes to picture memory 2. Figure 1 also shows other memories, including picture memory 8 and index memory 5. The picture memories and index memory permit a user to store captured video pixel data and a reduced image. A person of ordinary skill in the art would understand that the picture memory and index memory are random access memory.

33. In Figure 1 of the Original Application, the box labeled "disk recording/reproducing" is an example of bulk memory. The Original Application describes a disk to which images could be transferred for storage.

34. The Original Application describes several memories, including two picture memories. The captured full size image is stored in random access memory when it is captured and transferred to the picture memory.

35. The Original Application notes that the outputs of the picture memory 2, which are the full size images, are supplied to and recorded on disk.

36. The "squeezer" described in the Original application is a size reducer. In the Original Application, squeezer 4 reduces the picture to one-sixteenth its original size. The Original Application explains, "[t]he squeezer 4 has a specific function to reduce or

squeeze the picture size to one-fourth the original.” Figures 2 through 5 show that those images are reduced and can be displayed in a 4 by 4 mosaic. The Original Application describes the procedure as “three scanning lines are thinned out of four scanning lines and three sampling points on the scanning line are thinned out of four sampling points.”

37. I understand that Ampex contends that a reduced size image must be automatically generated from a full size image. I do not agree with this interpretation, but even under Ampex’s interpretation, the Original Application discloses this feature because the squeezer [4 in Figure 1] automatically generates the reduced size image from the full size image in the picture memory [2 in Figure 1].

38. The reduced size image generated from the full size image by the squeezer corresponds to the full size image because it is a reduced copy of the full size image.

39. The Original Application explains that 16 of the reduced images are displayed on an index screen with index reference numerals, and that the index reference numerals can be used to access the full size image from the disk. This indicates that the system keeps track of the correspondence between the reduced and full images. Similarly, the field of the invention section of the Original Application states that the “invention relates to a picture processing apparatus for selecting a desired picture from a plurality of still pictures formed on a monitor screen by means of selecting means.” This further indicates that the system keeps track of the relationship between the reduced and full size images. The Original Application explains, “The index reference data representing a respective squeezed picture can be detected by means of a light pen 10. The information corresponding to the desired index number is detected through a

detecting circuit 9 directing the light pen 10 onto one of squeezed still pictures to be selected.”

40. In the Original Application, when the squeezer generates a reduced size image, the squeezer transfers the reduced image to disk by way of a random access memory. In the Original Application, this memory is not explicitly shown, but from Figure 1 and the description in the Original Application of the function of the squeezer circuit, one of ordinary skill in the art in the early 1980s would have understood that the squeezer would transfer the reduced image to memory before it is stored on the disk 3. It was a standard practice before and after 1983 to store data in a random access memory before and after processing it and before moving it to disk. And, storing the reduced image in its entirety before transferring it to disk is the most efficient way to do this.

41. Designers used random access memory to buffer data before and after processing, and before actually writing it to disk. In general, it would be very inefficient to take the first few bits of data from the squeezer and write it directly to disk, then take the next few bits and write them to disk. Because writing to disk requires a relatively long set-up time to position the disk head in the correct position, it is much more efficient to write relatively large amounts of data to the disk at once. For example, it is more efficient to generate the entire squeezed or reduced size image, hold that in memory, and then write it to disk in one operation. This buffering concept was well-understood by anyone in the art in the early 1980s. If you look at other systems, such as the CCA SDMS system or the Taylor ‘776 patent, you see that reduced images are written from the size reducer to random access memory before going to the disk. I am not aware of any

system that tried to reduce (or otherwise process) images and send the reduced size images directly to disk without first sending them to memory.

42. The Original Application suggests that random access memory would be used between the size reducer and the disk, even though it is not shown in Figure 1 of the Original Application. In describing the process for writing the initial, full-size image to the disk, the Original Application states that the “speed for reading the picture memory 2 is modified so as to match the speed of rotation of the disk.” That is, the Original Application recognizes the need to control how data is sent to a disk. With the output of the squeezer, this logically would be done by using random access memory to buffer the entire squeezed image, which is only one-sixteenth the size of the original image.

43. Even if one did not know whether the Original Application intended for there to be sufficient memory to store all of one reduced size image at the same time before it was written to the disk, it would have been obvious to one of ordinary skill in the art to include enough memory to store an entire image for improved efficiency.

44. I understand that Ampex contends that the reduced size image must be generated prior to the full size being stored to disk and that both the full and reduced video pixel data must be available in random access memory before storage to disk. I do not agree with Ampex’s interpretation, but if that is required by the claims, I believe one of ordinary skill in the art would understand that these operations could be performed in any order or simultaneously in the system described in the Original Application. The Original Application reveals that both operations are performed, but does not specify the order in which the operations can be performed, or whether they might even be

performed at the same time. The Original Application specifically says, however, that the image is stored on the disk and “also provided to a squeezer.” Since the description uses the word “also,” I believe these operations could be performed in any order or simultaneously.

45. The squeezer described in the Original Application generates a reduced size image from the full size image in the picture memory (RAM). The squeezer receives the image directly from the picture memory. After a reduced size image is generated, the squeezer sends the reduced image directly to the RAM associated with the squeezer before the reduced image is stored on disk.

46. The Original Application indicates that the reduced size image is stored on the disk.

47. The Original Application describes a “changeover device 6” that allows the display of the reduced size images or the full size image, based on the user’s selection. The reduced and/or full size images can be recalled from the disk and transferred to the index memory 5 or to picture memory 8.

48. In the Original Application, images recalled from disk were transferred directly to either the picture memory or the index memory, both of which are random access memories.

49. The Original Application describes the capability for memory to store both full and reduced size images at the same time. As I have explained, there is memory to which the squeezer writes the reduced image, and the reduced image will be in this

memory, while at the same time, the full image will be in picture memory 2.

Additionally, picture memory 8 and index memory 5 hold full and reduced images simultaneously.

50. I understand that Ampex contends that the phrase “accessing ... simultaneously” requires that the claimed still store system access multiple reduced size images as part of one operation. I do not believe the cited language of claims 13 and 15 should be given this construction, but under that assumption, the Original Application would meet this requirement. As shown in Figure 1, “the outputs reproduced from the index track in the disk type recording/reproducing apparatus 3 are first supplied to an index memory 5 and recorded therein as information for one index screen.”

51. The figures included with the Original Application and their descriptions show how the images can be displayed as a mosaic. The Original Application used as an example a 4 by 4 mosaic.

52. The Original Application does not specifically describe the means to control the random access memory, bulk storage memory, and squeezer, but a person of ordinary skill in the art would understand that a computer or microprocessor is used for this control. Furthermore, the Original Application specifically discusses the memory replacement control as the control for the displaying functions of the system. Even if we were to assume that Mr. Harada intended that something other than a computer or microprocessor was controlling the reducing components, which is a very difficult assumption to make, it would be obvious to one of ordinary skill in the art to include such a control device because that is a standard way to control these types of components.

53. Ampex itself acknowledges the similarities between Mr. Harada's invention and the '121 patent.

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II. The CCA SDMS

54. The SDMS project ran from approximately 1977-1980 at MIT and was spun off to the Computer Corporation of America (CCA) for further commercial development.

55. The CCA SDMS was a computer graphics system that provided a spatial way to organize information. It allowed an operator to capture, store, create, manipulate and display video images. SDMS stored big and little versions of the same pictures on the disk and in memory, and allowed the user to select which big pictures to see by navigating and selecting the small pictures.

56. By 1980, CCA SDMS had been described by many articles, including "A Prototype Spatial Data Management System," by Christopher F. Herot, Richard Carling, Mark Friedell, and David Kramlich (published in *SIGGRAPH* 1980, pp. 63-70) ("SIGGRAPH Article"); "Spatial Management of Data," by Christopher F. Herot (published in *ACM Transactions on Database Systems*, Vol. 5, No. 4, December 1980, pp. 493-514) ("TODS Paper"); and "The Management of Very Large Two-Dimensional Raster Graphics Environments," by Mark Friedell, Richard Carling, David Kramlich and Christopher F. Herot (published in *Proceedings of The Workshop on Picture Data*

Description and Management, Asilomar, CA, August 27-28, 1980, pp. 139-144) ("IEEE Paper").

57. The SIGGRAPH Article was presented at the SIGGRAPH conference in 1980. A video was shown as part of that talk, and was made available for purchase for people who attended the conference. Subsequently, the paper and video continued to be available. In addition, live demonstrations of the CCA SDMS system were made to many people during this time frame. The paper and associated video from 1980 show that CCA SDMS could show big and little versions of the same picture, and that pressing on a little picture with your finger caused the big picture to come into view. The paper describes that if you load in a new big picture captured from a video camera, the corresponding little picture is automatically created.

58. In addition to these articles, CCA SDMS was also described in a preliminary design technical report that was prepared in 1978. The report explains many details of the CCA SDMS system, as it had been designed in 1978. Some of the ideas had changed by the time the real system was implemented in 1980, but this 1978 technical report is accurate on many points.

59. CCA SDMS could be used as an electronic still store, but it was much more than that. It had the additional capabilities of an electronic still store in that it could capture, generate, store, manipulate, and recall video images. It also had extensive capabilities for organizing, storing, generating and retrieving information, as well as graphics capabilities that would allow an operator to edit the graphical images.

60. The major physical components included three monitors, left, right and center, each with a frame buffer as part of what was called the Lexidata display. CCA SDMS also had a data tablet, a joystick, a keyboard, and a computer. An external vidicon camera could be used to digitize new pictures.

61. CCA SDMS stored information in what were called data surfaces, also called image spaces or I-spaces. CCA SDMS users could choose the size of a data surface, which was usually larger than the resolution of the computer monitor, as well as what data to save on the data surface. Data surfaces were stored on disk, and could be displayed one at a time. The left monitor, which was called the "world view," was designated for the display of the entire data surface, sized to fit the monitor. The center monitor allowed a user to focus in on a particular part of the data surface. The user could select the piece of the data surface that would be displayed on the center monitor either by using the joystick or by touching a selected location on the left monitor. The right monitor was used mainly for displaying a menu of commands for use with the graphical editor.

62. In CCA SDMS, images could be input from an external source such as the system's vidicon.

63. CCA SDMS had random access memory, namely the frame buffers of the Lexidata display, which enabled the operator to store captured video image data. In CCA SDMS, a full size image could be input into a data surface causing it to be displayed on the center monitor and also causing a reduced size version of the full size image to be displayed on the left monitor. Both the full and reduced size images, in order to be

displayed on the monitors, would be stored in the frame buffers of the Lexidata displays. The Lexidata system used a dual-ported RAM.

64. CCA SDMS had a moving-head disk that stored data surfaces, which is bulk memory. The data surfaces were stored in their entirety to disk, and could be recalled from disk to the Lexidata display for review and/or display.

65. The data surfaces could contain one or more full size images which would be stored to disk. The full size images could also be recalled from disk to the Lexidata display.

66. CCA SDMS could generate reduced size images. Data surfaces larger than the size of the display of the center monitor could be created and saved. For every change or addition made to the data surface appearing in the center monitor, CCA SDMS reduced the picture shown in the center and displayed the smaller picture, proportionally, on the left monitor. So, when a user using the graphical editor added an image from the vidicon to the part of the data surface displayed in the center monitor, a smaller version of that image was created and appeared in the Lexidata display on the left monitor of the CCA SDMS.

67. I understand that Ampex contends that a reduced size image must be automatically generated from a full size image. Under Ampex's interpretation of this limitation, CCA SDMS also meets this limitation because each time you load in a new big picture captured from a video camera, the corresponding little picture is automatically created.

68. The reduced size image is a reduced copy of the full size image. I understand that Ampex contends that the use of the word “corresponding” requires that “a relationship be maintained between each full size image and the reduced size image generated from that full size image.” I do not agree with this interpretation and, in fact, the ‘121 patent does not describe that feature. Even if Ampex’s definition is accepted, CCA SDMS generated and stored a “corresponding” reduced size version of the full size image. By touching (or selecting by use of a joystick) an area of the world view map displayed on the left monitor, the corresponding full size area would be displayed on the center monitor.

69. In CCA SDMS, the reduced size image appeared on the Lexidata display of the left monitor, while the full size image appeared on the Lexidata display of the center monitor. These images were stored in the frame buffers of the respective monitors.

70. I understand that Ampex contends that the reduced size image must be generated prior to the full size being stored to disk and that both the full and reduced video pixel data must be available in random access memory before storage to disk. I do not agree with that interpretation, but if that was required by the claims, CCA SDMS would still meet it because a change made on the center monitor appears almost instantly on the left monitor. Therefore, when the edit to the data surface is the import of a full size image, the full size image appears in the frame buffer of the center monitor and the reduced sized image appears almost immediately thereafter in the frame buffer of the left monitor. Both images remain in the frame buffers without being written to disk until the user moves on to another function.

71. CCA SDMS could store the reduced size image on disk. The reduced size image that appeared on the left monitor as a part of the world view map was stored on a moving-head disk as part of the world view map. The world view map was stored to disk after being updated in the frame buffer.

72. Ampex's Opening Brief in Support of its Motion for Partial Summary Judgment That the '121 Patent is Not Anticipated has mischaracterized my statement in my Initial Expert Report with respect to the ability of the CCA SDMS to store a reduced size image on disk as "merely storing a single large composite image." For each full size image, the CCA SDMS stored the corresponding reduced size image on disk using only the memory corresponding to the size of the reduced size image. Furthermore, the reduced images retained their correspondence to the full size images, and when the full-size images are re-arranged, the corresponding reduced size images are automatically rearranged.

73. CCA SDMS could recall a full size image and reduced size images from disk back to random access memory. Each time a data surface was recalled from disk, the world view map containing the reduced size images was recalled from disk in its entirety, and part of the data surface containing the full size image would be recalled to the center monitor. The CPU would cause the images to go directly from disk to the computer's random access memory, and then directly from the computer's random access memory to the frame buffer's random access memory.

74. CCA SDMS stored both the full and the reduced size images in random access memory at the same time when the system accessed a data surface larger than the

display of the center monitor. In that situation, the full size image was stored in the random access memory of the frame buffer of the Lexidata display when displayed on the center monitor, and at the same time the reduced size image was stored in the random access memory of the frame buffer of the Lexidata display when displayed on the left monitor.

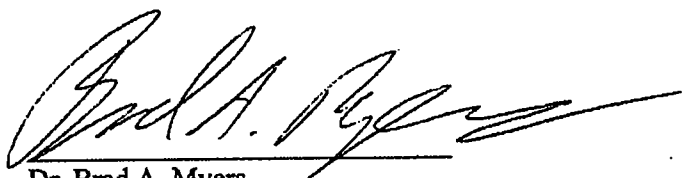
75. CCA SDMS could access a full and a reduced size image simultaneously. Whenever a full size image was accessed in the center monitor of SDMS, a reduced size version of that image appeared in the left monitor. When the user recalled that data surface from disk, that action caused a full size image to be displayed in the center monitor at the same time the corresponding reduced size image was displayed in the left monitor.

76. In CCA SDMS, the images can be displayed as a mosaic. If, for example, a user created a data surface that consisted entirely of images input from the vidicon, the world view map displayed on the left monitor would display the multiple reduced size images that had been stored together as part of the data surface. These could be arranged as a mosaic.

77. CCA SDMS used a PDP-11/70 general purpose computer to control the system's generation of reduced size images and the transfer of images. The Lexidata frame buffer was directly connected to the PDP-11/70.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 13, in 2006



Dr. Brad A. Myers

CERTIFICATE OF SERVICE

I hereby certify that on June 19, 2006, I electronically filed the Redacted Declaration of Dr. Brad Myers in Support of Defendants' Answering Briefs to Ampex Corporation's Motions for Summary Judgment with the Clerk of the Court using CM/ECF which will send notification of such filing to the following:

Jack B. Blumenfeld, Esquire
Julia Heaney, Esquire
Morris, Nichols, Arsht & Tunnell
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and that I caused copies to be served upon the following in the manner indicated:

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